# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 09/854,327 | 05/11/2001 | Daniel Marcu | 06666-107001 | 7660 |

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| EXAMINER |
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| SPOONER, LAMONT M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2626 | |

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
| :--- | :--- | :--- |
| **Office Action Summary** | 09/854,327 | MARCU, DANIEL |
| | Examiner | Art Unit | |
| | Lamont M. Spooner | 2626 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>6/21/06</u>.

2a)☒ This action is **FINAL**.     2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>1-33</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-33</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>11 May 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

# DETAILED ACTION

## *Response to Arguments*

1.      Applicant's arguments filed 6/21/06 have been fully considered but

they are not persuasive.

In response to applicant's arguments, "Poznanski fails to teach or

suggest "generating an intial translation as an intial current target language

translation" ...The translation is not a word-or-word initial translation". The

Examiner fails to locate this limitation in the claims, or disclosure. In

response to applicant's arguments. The Examiner fails to see the relevance

of applicant's noted intricate steps to a translation (Poznanski) and a

translation as claimed, wherein they both are translations of an input text

segment.

In response to applicant's arguments, "Poznanski does not teach the

element, either expressly or inherently, of applying one or more

modification operators to the initial current target language translation to

generate one or more modified target language translations, and therefore

..." The Examiner cannot concur, wherein Poznanski teaches, C.4.lines 1-

23, his transformation includes a modification operator (his rule) re-ordering

the target language translation, C.5.lines 45-50, see Fig. 11-15). Applicant

argues, modifying the structure of a translation is not modifying a

translation, however, the Examiner cannot concur, wherein modified

structure translations inherently modify translations (i.e. ten banks open,

and, open ten banks)

In response to applicant's arguments, "Poznanski does not teach...of

determining whether one or more of the modified target language

translations represents an improved translation in comparison ..." The

Examiner cannot concur. Poznanski teaches this limitation in C.4.lines 1-

23, 13-15. The evaluator teaches **converging** on a correct target language

translation, which inherently includes said determination and comparison,

furthermore should by definition includes at the least a "condition".

In response to applicant's arguments, "Poznanski does not

teach...the setting of a modified target language translation as the modified

current target language translation." The Examiner cannot concur, wherein

Poznanski teaches setting a modified target language translation as the

current target language translation, C.4.lines 1-23-his Each transformation

should have the effect of improving the structure... , wherein his first

attempt at target translation, is the initial translation, and is interpreted as

modified and current modified target translation in each transformation-

c.5.lines 25-40.

2.    In response to applicant's argument that there is no motivation to

combine the references, the examiner recognizes that obviousness can

only be established by combining or modifying the teachings of the prior art

to produce the claimed invention where there is some teaching, suggestion,

or motivation to do so found either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art.  See *In re*

*Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958

F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).  In this case, Berger provides,

C.2.lines 40, 41, determining the most probable alignment, which would be

an added benefit to Poznanski.

### *Claim Rejections - 35 USC § 102*

1.    The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in

this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.    Claims 1-5, 8, 9, 15, 18-21, 25, 27 and 28 are rejected under 35

U.S.C. 102(e) as being anticipated by Poznanski (US 5,848,385).

As per **claims 1, 15 and 27**, Poznanski teaches a machine

translation decoding method comprising:

receiving as input a text segment in a source language to be

translated into a target language (C.3.lines 50-55);

generating an initial translation as an initial current target language

translation (C.3.lines 59-61);

applying one or more modification operators to the current target

language translation to generate one or more modified target language

translations (ibid, C.4.lines 1-23);    ·

determining whether one or more of the modified target language

translations represents an improved translation in comparison with the

current target language translation (ibid, C.4.lines 13-15);

setting a modified target language translation as the current target

language translation (ibid, C.4.lines 1-23-his Each transformation should

have the effect of improving the structure..., wherein his first attempt at

target translation, is the initial translation, and is interpreted as modified

and current modified target translation in each transformation-C.5.lines 25-

40, where the transformation is translation); and

repeating said applying, said determining and said setting until

occurrence of a termination condition (ibid).

As per **claims 2 and 18**, Poznanski teaches claim 1, and further

teaches wherein the text segment comprises a clause, a sentence, a

paragraph or a treatise (C.4.lines 29-31).

As per **claim 3**, Poznanski teaches claim 1, and further teaches

wherein generating an initial translation comprises generating a gloss (Fig.

7).

As per **claim 4**, Poznanski teaches claim 3, and further teaches

wherein the gloss is a word-for-word gloss or a phrase-for-phrase gloss

(ibid).

As per **claim 5**, Poznanski teaches claim 1, and further teaches

wherein applying one or more modification operators comprises changing

in the initial current target language translation the translation of one or two

words (Fig. 7-like-Fig. 15-likes).

As per **claim 8**, Poznanski teaches claim 1, and further teaches

wherein applying one or more modification operators comprises modifying

an alignment between the source language text segment and the initial

current target language translation by swapping non-overlapping target

language word segments in the initial current target language translation

(Fig. 7 items (i)-(vii), and Fig. 15).

As per **claim 9**, Poznanski teaches claim 1, and further teaches

wherein applying one or more modification operators comprises modifying

an alignment between the source language text segment and the initial

current target language translation by (i) eliminating a target language word

from the initial current target language translation (Fig. 7-to like, fig. 15) and

(ii) linking words in the source language text segment (Fig 7-Plaire a).

As per **claims 19, 20, 21, 28**, claims 19-21 and 28 set forth

limitations similar to claims 1, 3, and 4 and are thus rejected for the same

reasons and under the same rationale.

As per **claim 25**, Poznanski teaches claim 15, and further teaches

iteratively modifying the translation comprises performing at each iteration

one or more modification operations on the translation (see claim 1).

### Claim Rejections - 35 USC § 103

3.    The following is a quotation of 35 U.S.C. 103(a) which forms the

basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.      Claim 6, 7, 10, 12-14, 16, 17, 22-24, 26, and 29-33 are rejected under

35 U.S.C. 103(a) as being unpatentable over Poznanski in view of Berger

(US 6,304,841, which properly incorporates Brown et al, Brown, US

5,477,451 by reference).

As per **claims 6 and 7**, Poznanski teaches claim 1, and further

teaches wherein applying one or more modification operators comprises (i)

changing in the current target language translation a translation of a word

(see claim 5) but lacks concurrently (ii) inserting another word at a position

that yields an alignment of highest probability between the source language

text segment and the initial current target language translation , the

inserted other word having a high probability of having a zero-value fertility.

However, Berger teaches changing in the current target language

translation a translation of a word (Fig. 4 his "superior", Fig. 5 his "greater")

concurrently (ii) inserting another word at a position that yields an

alignment of highest probability between the source language text segment

and the current target language translation (Fig. 5. his "than" as the

inserted word, C.2.lines 38-41-his most probable alignment, and Brown,

Fig. 38, his les6-C.31-C33.line 52-his maximum entropy teaches the

highest probability of alignment), the inserted other word having a

substantial probability of having a zero-value fertility (Brown Fig. 38 his les6

interpreted as having zero fertility, and inserted in the English to French

translation, C.64.lines 25-28-his fertility 0), and deleting from the initial

current target language translation a word having a zero-value fertility,

(Brown, C.64.lines 45-51-his "there is nothing about..." is interpreted to be

the deleted words from the current translation, and his zero-fertility, claim 7.

Therefore, at the time of the invention, it would have been obvious to

modify Poznanski's alignment with Berger's alignment. The motivation for

doing so would have been to determine the most probable alignment

(C.2.lines 40, 41-Berger).

As per **claims 11, 12-14, and 29-32**, Poznanski teaches claim 1, but

lacks explicitly teaching wherein determining whether one or more of the

modified target language translations represents an improved translation in

comparison with the initial current target language translation comprises

calculating a probability of correctness for each of the modified target

language translations and wherein the termination condition comprises a

determination that a probability of correctness of a modified target

language translation is no greater than a probability of correctness of the

current target language translation. However, Berger teaches wherein the

termination condition comprises a determination that a probability of

correctness of a modified target language translation is no greater than a

probability of correctness of the current target language translation

(C.15.lines 7-C.16.line31-his maximum entropy as determining a probability

of correctness, the last iteration being the most/or maximum probability of

being correct, by definition, see maximum entropy and gain discussion

C.16-C.28-language modeling-claim 30, C.23.line 36, 40-48-his termination

condition, C.28.line 45-his termination condition, the Examiner interprets,

the modifying, gain and feature improvements to be terminated, once the

maximum entropy is achieve, or the probability of correction, or correct

alignment can not be further bettered. Furthermore, the Examiner takes

Official Notice that in repeating (algorithmic) processes, terminating when

there is no improvement of the process, termination upon a completion of a

predetermined number of iterations, and termination upon a lapse of a

predetermined amount of time was well known to one ordinarily skilled in

the art at the time of the invention. Therefore, at the time of the invention, it

would have been obvious to modify Poznanski's termination of improving

his sequence of translations including modification with a termination

condition, including those listed above. The motivation for doing so would

have been to have a stopping point for an algorithm based upon if the

features improve the likelihood of correctness, (C.23.lines 41-47), time-out,

or predetermined iterations, otherwise the algorithm could run endlessly.

As per **claims 16, 17**, Claims 16 and17 set forth limitations similar to

claims 12 and 13 and are thus rejected for the same reasons and under the

same rationale.

As per **claim 22**, Poznanski further teaches wherein the approximate

target language translation comprises a predetermined translation selected

from among a plurality of predetermined translations (C.3.lines 60-63).

As per **claims 23 and 24**, Poznanski lacks explicitly teaching the

method implements a greedy algorithm, wherein iteratively modifying the

translation comprises incrementally improving the translation with each

iteration.

. However, Berger teaches the method implements a greedy algorithm and

iteratively modifying the translation comprises incrementally improving the

translation with each iteration (C.23.lines 58, 59-his greedier algorithms,

C.24-28-details the algorithms and method, wherein each iteration

improves the translation, C.15.lines 7-C.16.line31-his maximum entropy as

determining a probability of correctness, the last iteration being the most/or

maximum probability of being correct, claim 24, by definition, see maximum

entropy and gain discussion C.16-C.28). Therefore, at the time of the

invention, it would have been obvious to modify Poznanski's repetitive

algorithm with the greedy algorithm of Berger. The motivation for doing so

would have been to have a practical greedy algorithm (C.23.lines 58, 59),

which improves the translation with each iteration.

As per **claims 10, 26 and 33**, claim 10 sets forth limitations similar to

claims 5, and 6, and is thus rejected for the same reasons and under the

same rationale.

### *Conclusion*

5.      **THIS ACTION IS MADE FINAL.** Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to

expire THREE MONTHS from the mailing date of this action.  In the event a

first reply is filed within TWO MONTHS of the mailing date of this final

action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory

period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6.      Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status

information for published applications may be obtained from either Private

PAIR or Public PAIR. Status information for unpublished applications is

available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on

access to the Private PAIR system, contact the Electronic Business Center

(EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-

1000.

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9/6/06

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